

LOCOST NOVICE PACK (v2-2)



Welcome to the 750 Motor Club Locost Race Series

This pack has been designed with the novice racer in mind, although the information may also be helpful other Locost Racers and for other formulas of motor sport.

The contents in this pack will give the novice an idea of useful contacts, a pre meeting checklist, a selection of technical information, an understanding of set up ideas a section on brakes, another on engines, etc.

It is hoped that this will enable you to get 'on the pace' as quickly as possible.

Other features of this pack are a fuel usage chart, a comprehensive section of companies who specialize in track days and details of the circuits.

All the locost racers are incredibly friendly and more than willing to help, so have a look at the drivers guide and go and introduce yourself, we won't bite.....until the red lights go out....

We hope this guide is of use but remember the tips and technical information are purely guides. The lists supplied are not exhaustive – but they are a start. Similarly, the set up information may not suit all driving styles but it will give beginners the basis on which to start their own learning curve and if you feel changes can be made please let us know.

Speaking to other Drivers is always worthwhile as most will give you the support and answer any questions not matter how trivial they maybe!

Good Luck andEnjoy!!!

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Interested in getting started?

It is strongly recommended that before any serious investment in machinery that a visit to at least a couple of race meetings to see how things run, see the cars and talk to a few drivers, and meet a few of the club team to give you a good background about what goes on the what the meeting runs and processes that go on during a race day / weekend.

Once you are committed there a few options but track time is always good..

Recommend getting out on track days – even in a road car before venturing out in a race car to get the feel of circuits.

You will need to get a race licence which requires applying to the MSA and passing an ARDS test – see Link below for further details

<http://www.750mc.co.uk/racing.htm>

Join the Locost Facebook group – ‘750mc Locosters’

Although you can build you own car from scratch it probably a good idea to start with a second-hand car of some known race history so you get off to a solid start.

Second hand cars do come up regularly and can be seen on the 750mc classified, Locost facebook page, Ebay, and other race car websites. Do try and see more than one to get a feel for what you are investing in. Remember you will need a means of getting your car to and from the race circuits, e.g. Trailer / transporter.

There is more later in this back about being at a race meeting and guidance on what to do and not to do!

Above all enjoy your racing !

TECHNICAL TIPS

TYRES

There is an abundance of theories written on tyres and their behaviour. The following hopefully gives you enough information to understand the basic principles and how they relate to the Locost racing series.

Buying and Buffing

Before ordering tyres make sure that the supplier can offer a buffing service. Having tyres scrubbed/buffed from new will help control the treads contact patch, helping with grip levels and reducing heat build-up, giving a more consistently handling car. A set of new Yokohama A539's will last for a season, even when buffed to 4 to 5mm. The tyres will lose some performance over a year, but not by very much.

Remember to ask for the wheel weights to be placed inside the wheel to stop them being knocked off in the heat of battle.

20 to 30 minutes of medium pace running, split into two periods, will give the tyre a valuable heat cycle.

Also avoid, if at all possible, filling tyres with air on damp/wet days. Excess moisture will heat the tyres carcass far faster and potentially the tyres grip level will be lessened.

Tyre Pressure and Temperature

Having a good pressure gauge is invaluable, a temperature gauge can be handy too. It is good practice to make sure the tyres are at the right pressure before each run and to take the pressure immediately after each session. The information can be written down using the set up sheet provided

All chassis are different and the way they are set up is too. Working on starting from a cold reading, a pressure range between 20 and 30 psi will need to be tried and tested against the stop watch, starting from the lower reading. Too low a pressure could mean the tyre never reaches a high enough temperature, too high and the car will respond early in a race but become harder to control towards the end.

Try to find a balance between the two. By looking at lap times, if everything else is equal, then the times will reach a high point early or later on during a session or race. Early on, there is too much pressure in the tyre, late equals too little.

Knowing tyre temperature across the tread can help find the optimum pressures and help diagnose handling issues. If the tyre is warmer towards the edges of the tread, too little pressure or the suspension maybe too soft, higher in the middle, too much pressure. If the tyre starts to go blue then it has gone beyond its operational temperature level.

The 750MC very rarely give the Locost class a warm up lap before a race, unless conditions change since Qualifying or the second day of a weekend event, so be aware you will probably be starting on cold tyres .There is some increase of grip with

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warm tyres, but with the treaded tyres we use it's not that significant. Some drivers give a little spin of the wheels and a bit of weaving before the start in an attempt to get a little temperature in the tyres; however, the amount of warming you can actually get into them between the assembly area and the start grid is most likely minimal, and any gain is likely lost as you sit waiting for the start lights. *(Note:- Please take care and don't spin wheel near the grid as the circuit don't appreciate scaring marshals and some actively band the practice)* During practice it is worth warming the tyres for a couple of laps before you go for a hot lap. Use the out-lap to increase temperature in both the tyres and the brakes.

It's worth noting that a drop in tyre pressure will change the corner weight and any suspension change may require a rethink of the pressures to be used.

As you develop the car and yourself, it will be worth revisiting the tyre pressure subject again and again.

More experienced racers will avoid using their tyres maximum grip levels early in a race so that they can race faster towards the finish when others maybe experiencing a lack of grip.

Wets

If new unbuffed tyres are going to be used make sure that the outer wax coating is removed. A short test session will take this layer off. Failure to do so will turn most circuits into an ice rink.

To save money in the early days, a 4 or 5 mm tyre can be used in the wet and the dry. The tread depth of a new tyre would only really be used in monsoon conditions, which would mean a postponement of the event to when the level of standing water has subsided.

It is helpful to have a backup if you need to keep cost down, particularly when you are just starting out, then you can probably make do with just one set.

In the wet an increase in tyre pressure can help as they won't get as warm as you'd normally expect them to do in a dry race, it will also open the tread pattern to increase the amount of water that can be shipped by each tyre.

Housekeeping.

Always check tyres for cuts and damage between sessions and check the tyre pressures once they have cooled for potential punctures.

Always write down the pressures you settled with after an event. Most circuits do not require much in the way of changes to pressure, however, some do!

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BRAKES

The braking system on a Locost consists of some old style rear drums and a pair of solid discs utilising the ubiquitous M16 calliper. The system is excellent when set up correctly.

Pads

Before an event, Front pads should be brought up to temperature and allowed to cool before being used in anger. Two popular types, EBC's Green Stuff and Mintex's 1144 have, especially in the case of the 1144, require a complete cycle of running in instructions be adhered to before the pad will be fully operative. Failure to do the heat cycle step will usually render the pads ineffective.

Standard FOMOCO rear shoes can be used. There is no real need to upgrade these items as they are hardly used in comparison to the front pads, although some drivers do. Keep an eye on them as they can be easily forgotten!

Brake fluid

Avoid using the very high spec blends as they are usually designed for full race car brake applications also the high end stuff eats everything in its path and can requires braking systems to be junked at the end of each season. Most use either DOT 5 or DOT 4, DOT 4 seems to work fine but should be replace annually.

You may need to change the pads more than once a year and you might want to consider changing the fluid at the same time, but as a minimum you should consider changing it annually.

Discs

The disc width size rules renders removing the face to 11mm from a standard 13 mm a as real nice to have. Recommendation is to leave the discs alone and concentrate on other areas as some pads will thin a disc quickly enough.

Brake Balance

One reason that many find their braking system far from optimal is that they have not employed a bias bar or lever into the system. For the car to stop in a balanced manner, a 60 to 40 or 70 to 30 or 80 to 20 brake bias split needs to be introduced with the higher number applied to the front. Any testing should be carried out after corner weighting the car.

Increasing bias to the rear when it's wet can be beneficial and its good if you have tried this beforehand otherwise it may be hit or miss with the setting. At no point (wet or dry) should the cars rear brakes lock before the fronts.

Brake Pedal

The final piece of set up relates to pedal position. You might want to set up the accelerator pedal to be at the same height as the brake pedal when it is at full working level compression (which is not very much with the un-servo assisted system

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deployed). This adjustment will allow you to move your foot across to the accelerator after breaking has been completed in a smooth movement.

On the track

Without a warm up lap, the brakes need to work from the beginning of a practice session or race. This renders most expensive pads incompatible with our style of racing as they need a high temperature level before they start working effectively and are often designed for heavy cars (weight and aero) that will often be using slick tyres not our "hard as nails" treaded

A trick to generate heat at the start of a session is to apply left foot brake pressure and add a little handbrake when trundling down the pit lane or when travelling to your grid spot. This will go some way to avoid cold brake lock ups at the start.

Avoid using the handbrake or leaving your foot on the brakes after a session. The contact can potentially create two issues: the brake fluid will boil, but more importantly, the pad surface will fuse onto the disc's surface. This fusion will damage the pad creating a glaze and create disc warp. The disc does not actually warp (old wives tale); it just becomes unbalanced due to the pad deposits being transferred to the discs surface.

Handbrake

Rules make it clear that the handbrake must work on both wheels. Some use two cables and a balance link others use a single cable and a cross link either the standard escort cross bar or floating cables. Need to ensure that both wheels lock and the car cannot be pushed when on a flat dry surface.

PREPARING A 1300 ENGINE FOR LOCOST RACING

This short article introduces the 1300 Crossflow, and what can be done to improve its performance and reliability whilst racing in the Locost series.

Although the rules specify that the engine is standard, there is quite a bit of work that can be done at home to try and improve reliability and performance. No great detail will be gone in to here, just areas that can be addressed.

Tools

Depending on what you actually intend doing to your engine, the tools required will vary, but these are a few you may find useful.

Socket set – Imperial/Metric

Torque wrench (useful for undoing stubborn bolts because of the leverage)

Engine stand

Feelers

Valve compressor

Piston Ring compressor

Scales (0.1g)

Valve grinding paste and sucker tool

Angle grinder with wire brush

Dremmel or similar

Engine Overview

The engine itself is a 1300 Xflow, GT spec, and can be overbored to +90, giving it a nominal capacity of 1380cc. The block type required (because it is stronger) is the 711M. The 1300 engine has the number 711M 6015 AA cast in to the block; the 1600 is 711M 6015 BA. The 1100 and 1300 blocks are the same, the capacity difference coming from a different crank and conrods.

Final HP figures for a good engine will be between 80-85 hp, and it should be able to rev to about 7k before valve bounce starts to cause problems.

When disassembling the engine, ensure you mark the conrod AND caps with the bore number so they don't get mixed up. This can be done with a number punch or by punching lots of dots to form the number required.

One disassembled, everything should be cleaned to within an inch of its life. The block and head can be flushed out with a paraffin gun and compressor, although some simply use detergent and a jet wash, although in this case you must get it dry VERY quickly, and coat surfaces with grease to prevent rusting. Paraffin will leave a thin coating, but if leaving for any length of time you will need to coat with something more substantial to prevent rusting.

Most nuts and bolts can be retained, but you should really replace conrod bolts with extra strong **ones** (ARP Bolts)– available from places like Burton at outrageous cost.

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When reassembling the engine, you can use a proprietary engine assembly compound, such as Graphogen or can simply paint the components with oil. When using oil, the followers and cam should be lubricated with Cam Lube which is thicker and won't have fallen off the parts by the time you start the engine!
Block.

The overboring of the engine is essential to get the best performance possible whilst staying within the rules. It is also important to use a head which has the correct sizes of inlet and exhaust valve to give best performance – the bigger the better!

Decking of the block is often done to ensure it is flat and also give a slight increase in compression ratio. This should be combined with the thinnest gasket allowable for the same reasons. The regulations give more details on how far you can go with this.

Although the crank journal bearings should usually be replaced (any obvious wear, gouges to differences in thickness mean new ones are required), it's usually not necessary to replace the camshaft bearings as these do not wear to any great extent, but it is a good idea to replace these when a new camshaft is fitted.

Pistons/Conrods

The rules state you are allowed to balance a maximum of 3 out of four of the conrod and pistons. If doing this yourself, find some scales that measure to .1g (Jewellery scales from EBay can be very cheap and do the job), and find the lightest one, and reduce the weight of the other to match. Material may only be removed from the areas specified by Ford.

It's difficult at home to balance things like conrods lengthways – but just getting them all the same weight will help.

Crank

Although cranks can have the conrod journals ground down undersize to remove any ovality, it best not to do this as it can reduce the throw if not done accurately and therefore the compression ratio. Try and find an un-ground crank that is nice and round. Crankshaft balancing at home is also not an easy task and is best done by a professional engine builder.

The crank pulley should be replaced with a solid steel 4" one, (Burton sell these) these are much stronger, and run the alternator and water pump at a lower speed preventing water cavitation, and reducing parasitic power losses.

Head

The head should have all the valves removed and be thoroughly cleaned, inside and out. The outside and deck can usually be effectively cleaned using an angle grinder with a twist knot wire brush. However, as no material must be removed from the ports, use a non-stainless wire brush, as otherwise the harder stainless wiring can gouge the interior of the ports and may cause the head to become illegal. When cleaning the ports, get right in and clean out as much as possible. A Dremmel or similar is useful here, or head cleaning brushes that fit on to a power drill can be purchased.

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The valves can be cleaned using a bench grinder with a wire wheel. Remember to keep the order of valves matched to the head, if you are not changing the valve seats. If any of the valves are bent, or badly pitted beyond what can be recovered by regrounding, they will need to be replaced. Some of the hardened deposits may need to be chipped off, but be careful not to scratch or damage the valve itself.

It's a good idea at this stage to have unleaded valve seats fitted to the head – this is NOT a home job. Also, the valves should be a good fit in the valve guides – if there is too much play the guides will need replacing. The rules explain what is legal when replacing both the guides and the seats.

Once everything is clean, the valves need to be seated. Use the usually sucker and grinding paste for the job. It's takes ages, but is worth it for the improvement in sealing, and is essential when new seats are fitted. It difficult to check whether the seal is good until the engine is reassembled, so time spent here will pay dividends later.

Once all is ground back in, the head and valves will need a good clean to remove any remaining paste, and it can all be reassembled. New springs should be used as the old ones are probably completely knackered. It's so much easier to use a valve compression tool for this – again these can be found quite cheaply.

Rockers

Although the rockers must retain the same profile as the original, it's important to ensure the minimum friction on the rocker. Remove all the rockers arms, and check that the rocker shaft is unmarked – after lots of use they can become grooved – a shaft that is grooved needs replacing. Also, check the spring bearing surfaces on the rocker arms themselves – marks on these can be smoothed off with fine wet&dry on a glass plate. Once all looks new, reassemble with graphogen or similar.

Camshaft

The camshaft must be that supplied by Hartwell Ford Hemel Hempstead, part number 91572456 (see link:- <https://www.hartwell.co.uk/servicing-parts/formula-ford-kent-engine-parts-price-list/>)

It is recommended that if the camshaft is replaced new cam followers and cam bearings are fitted at the same time.

The rules allow the use of offset dowels to change the timing of the camshaft, but this can only be measured once the engine is reassembled and dyno-ed. Use the standard dowel that comes with the cam as a baseline, as this is usually pretty close.

It's fairly cheap to replace the timing pulley, chain and tensioner, so do it.

When removing and replacing the camshaft in the block take great care to NOT scratch the bearing surfaces with the cam lobes. The edges are quite sharp and it's easy to do.

Dizzy

The rules state that any distributor body may be used, using either points or an electronic system such as the Lumention Optronic system, Aldon, Biztec etc. Worth mentioning here that programmable ignition is not allowed.

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The jury is out on which is the best, so either can be used, but any electronic system has less moving parts to go wrong, and there are reports that the standard dizzy can be unreliable. If using points get a new set and condenser – they are not expensive.

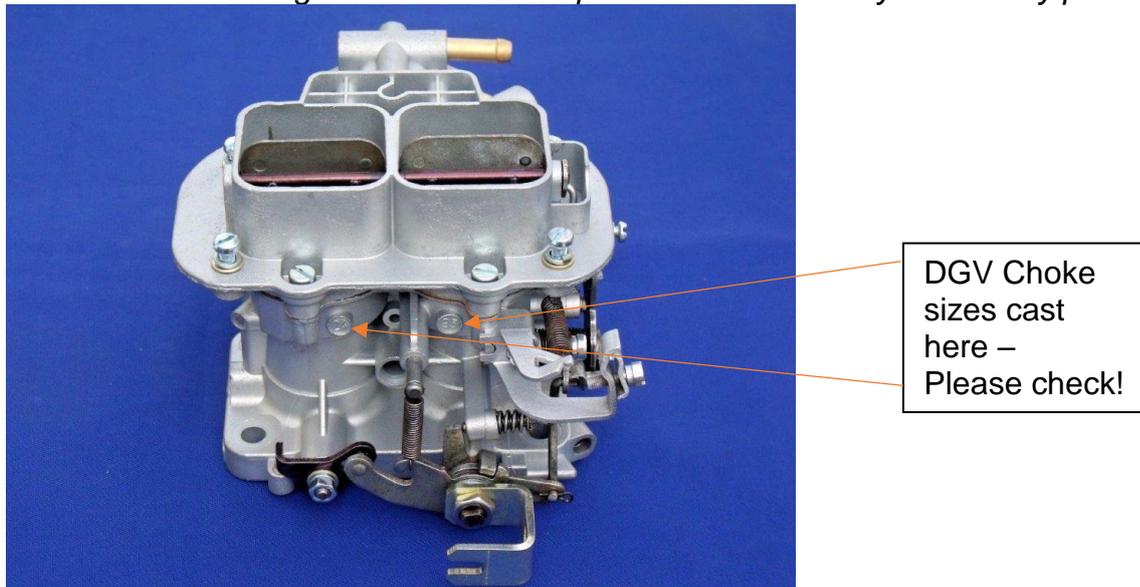
It's quite easy to dismantle the dizzy and give it a good service, making sure all the weights and springs in the advance are free to move. Some dizzies can be quite stiff when reassembled – they can be loosened by removing the cog on the bottom and using wet and dry to clean the upper surface. Taking 0.2mm off here will loosen things up, but don't do too much as some unreliability may be introduced with up and down motion of the shaft.

If not already remove the vacuum advance from the Dizzy and block off the corresponding hole in the base of the Carburettor.

Carburetion and fuel supply (Pump)

The carburetion is achieved with any downdraft twin choke carburettor, although the defacto standard is the Webber 32/36DGV, as found on GT Xflows, other twin choke progressive opening carburettors are available e.g. the 28/36 DCD. (Note; Some have found the later awkward to get running well.)

The key thing to remember is that the Carb must have 23/24 choke sizes these are fixed on the DGV carb and are cast on the body of the carb (see picture below) but can be changed on the DCD Carb to match the regulations. *Note:- The majority of DGV Carbs have larger Choke sizes so please check carefully before any purchase.*



Also the carb must be progressive opening, linkage as per picture above.

Further the carb must have at least two external return springs capable of closing the carb in the event that the throttle cable breaks – this will be checked in scrutineering. These carburettors are still available, but mainly second hand. Rebuild kits for older carburettors are readily available for about £19. Usually the choke system is removed (manual or auto) as it is not required and interferes with airflow in to the carburettor. No changes are allowed to the carburettor except for jetting.

Final key carb modification is to ensure the fuel pipe tube on the carb is replaced with a threaded fitting as the standard 'press fit' version has been known to come out causing fuel to pumped onto a hot engine – not good...

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The fuel supply pump must be electric (so it can be easily switched off by pulling the emergency cut off switch) and the original mechanical one removed, with the hole in the block covered by a blanking plate. There are couple of different designs; one is a simple plate, whilst the other has a baffle to stop oil being thrown up in to the crank breather. The second of these is a better bet (and both can be easily made at home) if you suffer from excessive oil being dumped out.

The pump itself should be sited near the tank at the back of the car, and there should be an inline filter between the tank and the pump.

Some people have found problem with the newer carburettors after sharp right hand corners, the symptom is the engine stutters after the corner. This is probably down to excessive fuel in the carburettor float chamber, and the best way to stop this is to fit a fuel pressure regulator just before the carburettor. The filter king is a popular option and can be found cheaply on the internet.

The air filter should be as efficient as possible, and kept clean. Numerous different types are available. Don't be tempted in to running without one.

The manifold does not need to be plumbed in to the cooling system; in fact rules allow for the water outlet and brake servo ports in the manifold to be blocked, *Note the water way between the head and the manifold must be left clear (Standard)*. The rules allow the manifold to have material removed to match it to the head, to a maximum depth of 10mm in to the manifold (DON'T remove any material from the head itself). Getting the transition as smooth as possible helps the air fuel mixtures get in to the head, improving power. Likewise ensure that the gasket you use matches the port, and doesn't interfere with the fuel/air flow.

Sump

A number of racers use a shallow sump, but going too shallow can cause real problems with oil feed and surge, and will reduce considerably the amount of oil in the engine. The main, essential modification is to baffle the tank to avoid oil surge under heavy cornering and braking meaning that the oil pump is pumping air causing very low oil pressure and possible engine damage.

Oil

If there are ten people in a Locost race, there are likely to be ten different recommendations for oil. However a good quality oil for older engines (remember the Xflow is 50 years old at least and original spec was 20w50) is Valvoline VR1. If considering other oils recommend reading up on the oil specifications and ratings. The jury is out on the thinner more modern synthetics – because they are so thin, unless the engine is very oil tight, it can escape!

Misc

Crossflows at high RPM like to throw oil out of the breather so it is essential to catch this. You can either stuff a pipe from the breather to a plastic bottle or ally catch tank somewhere, on the front bulkhead or some people weld a pipe in to the rocker cover to squirt any oil back in to the engine. Whichever solution you use you will need to ensure that there is some exit to atmosphere from the breather to prevent pressurising the crankcase. Note the MSA rules dictate that the catch tank be of minimum size capable of holding a minimum of 2 litres.

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Aerodynamics

Note:-Details and figures in this section are from earlier 'Novice Pack' and are not verified.

Introduction

Lotus 7 style cars are notorious for their poor aerodynamic characteristics. As well as having very high drag for their diminutive size, they also have a vast excess of lift and this is made more damaging to the vehicle's handling by being primarily focussed on the front axle.

Just some numbers for feel:

Typical drag coefficient of a Locost race car: 0.65

Typical drag coefficient of a Truck: 0.70

Typical drag coefficient of a saloon car 0.30

Typical performance road car lift values at 100mph (given in units of 'kg' for ease of appreciation).

Front 14kg

Rear 15kg

Locost race car at the same speed:

Front 40kg

Rear -15kg (downforce)

It is clearly understandable that many appreciate the huge scope for improvement of these characteristics and so over the years a great deal of effort has been expended on this cause.

The Rules As They Stand (Refer to latest reg's)

The Locost race regulations have been carefully revised over the years since the inception of the series in order to be as clear and fair as possible whilst allowing enough scope to be inclusive for the likely range of different design solutions utilised by the builders of such home-made cars. With respect to aerodynamics, the regulations state that no wings, spoilers, sidepods, or other aerodynamic devices are allowed.

Front number plates have been made mandatory, to clarify a loophole some competitors were exploiting and also to reduce the very high front lift of the cars, as described above. The location of holes/vents/louvres in the bodywork is restricted. The floor cannot be panelled over apart from "the area in the plans" and the area immediately beneath the fuel tank. (See regulations for details)

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Basic but Important Things to Do.

1. Make sure your radiator is sealed to the nosecone around its periphery. Bear in mind that the air will take almost any alternative route available to it rather than be squeezed through the blender-like radiator matrix.
- 2 Equally important to making sure the air can get to the radiator is making sure it can get back out again afterwards. Omitting the floor panel under the nose is the most effective approach, but carries a lift penalty. Ducting the air upwards and out of the top of the nosecone/ / front of the bonnet is not allowed within the rules so the second best solution is to vent it down the sides of the car.
3. Make sure that the stays for the front wheelarches are sturdy. A very large proportion of the lift on the front of a Locost comes from air rushing up the front of the tyre and building up pressure underneath the cycle wings. Since the rules forbid louvres in the mudguards on safety grounds. This means that the cycle wings can experience some quite large aerodynamic forces and need to be constructed accordingly. Also bear in mind that Locost racing is very close and that some form of contact is very likely. Front mudguards are very vulnerable and are frequently damaged. They therefore have to be strong enough to withstand the aerodynamic loadings even having taken a bit of a battering, or you risk either littering the track with debris or perhaps a black & orange flag.
4. Bonnet latches should be sturdy, for similar reasons to those above.

Tweaks

Within the scope of the regulations for the 750MC championship the options are very limited.

The regulations have been tightened to prevent people from tilting the lower edge of the front number plate forwards or allowing it to flex backwards at speed.

The rules forbid rotating the wheelarch around the perimeter of the wheel to shield the front face of the tyre whilst exposing the rear, but extending the front edge further around is allowed and beneficial.

Panelling the underside of the nose section is illustrated in Ron Champion's book and therefore allowed under the current Locost rules. This has benefits for lift reduction but is detrimental to engine cooling as mentioned above.

Panelling under the sides of the engine bay has a similar effect to the underside of the nose, but to a much lesser degree.

Having the car low but with a small amount of nose-down rake (~20-30mm higher at the rear) will reduce both drag and lift by a small amount, whilst shifting the centre of pressure forwards and thus reducing the front/rear lift imbalance. It is fair to say though that, for the typical speed range of a Locost race car, cornerweight and mechanical considerations are much more important and not normally worth the compromise.

Tonneau covers provide a small but worthwhile (~1-1.5%) drag reduction in low ambient wind conditions. On a windy day, however, they can increase drag quite markedly. The difference between a taut but flexible cover and a hard cover is negligible, and any form of solid reinforcement or ribbing of covers is forbidden by the rules on safety grounds.

APPENDIX

The following pages are a selection of checklists, useful contact lists, spare part numbers and a section on diff crush tube.

These are examples and share for info all are just to help not necessary 100% correct! So please use with this in mind!

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Equipment Checklist

Equipment checklist																																																																																																																																																																				
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White Board	<input type="checkbox"/>																																																																																																																																																																			
Marker Pens	<input type="checkbox"/>																																																																																																																																																																			
Food	<input type="checkbox"/>																																																																																																																																																																			
Drink	<input type="checkbox"/>																																																																																																																																																																			
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LOCOST NOVICE PACK (v2-2)

Set Up Sheet

Set up Sheet

Event	
Circuit	
Driver	
Lap Length	
Date	

Weather	
Temperature	
Wind	
Rain	
Track Cond.	

Suspension	
Camber	
Toe In	
Front Springs	
Rear Springs	
Front Ride Height	Ground to centre of front cross member
Rear Ride Height	Ground to rearmost part of rear side lower member
Front Dampers	First Click is 0
Rear Dampers	First Click is 0

Tyres	
Front Pressure Cold	
Rear Pressure Cold	
Front Pressure Hot	
Rear Pressure Hot	

Engine	
Igni Advn 1k / 5k	
Change RPM	
Max RPM	
Oil Pressure Idle	
Oil Pressure Race	
Water Temp Race	

Weight + Fuel	
Total Weight	
Fuel Level	
Volume	
Laps Completed	
Fuel Consumption	

LOCOST NOVICE PACK (v2-2)

Pre-Race Checklist

Pre Race Checklist								
Event :					Date :			
	✓	Values	✓	Values	✓	Values	✓	Values
Fluid Levels								
Brake	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
Oil	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
Water	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
Fuel	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
Video On	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
Mirrors	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
Tyres								
Cold		↑ — —		↑ — —		↑ — —		↑ — —
Hot		↑ — —		↑ — —		↑ — —		↑ — —
Other								
Wheel Nuts		lb/ft		lb/ft		lb/ft		lb/ft
Dampers		↑ — —		↑ — —		↑ — —		↑ — —
Gauges								
Oil Cold		psi		psi		psi		psi
Oil Hot		psi		psi		psi		psi
Water Temp		deg		deg		deg		deg
Fuel								
Starting Level		mm		mm		mm		mm
Finish Level		mm		mm		mm		mm
Fuel Used		mm		mm		mm		mm
Laps								
Comments								

LOCOST NOVICE PACK (v2-2)

Post Race debrief

Debrief Sheet						
Weather			Practice 1	<input type="checkbox"/>	Practice 2	<input type="checkbox"/>
Driver			Race 1	<input type="checkbox"/>	Race 2	<input type="checkbox"/>
Comments						

LOCOST NOVICE PACK (v2-2)

Fuel Usage table – Note mpg is an estimate, please check your car..

Fuel Requirements Sheet			
Car Details			
Fuel Consumption	11 mpg		
Fuel Volume Required			
	Race Distance in miles	Fuel Required (Litres)	Weight in kg
	10	4.14	3.0
	11	4.55	3.3
	12	4.96	3.6
	13	5.38	3.9
	14	5.79	4.2
	15	6.20	4.5
	16	6.62	4.8
	17	7.03	5.1
	18	7.45	5.4
	19	7.86	5.7
	20	8.27	6.0
	21	8.69	6.3
	22	9.10	6.6
	23	9.51	6.8
	24	9.93	7.1
	25	10.34	7.4
	26	10.75	7.7
	27	11.17	8.0
	28	11.58	8.3
	29	12.00	8.6
	30	12.41	8.9
	31	12.82	9.2
	32	13.24	9.5
	33	13.65	9.8
	34	14.06	10.1
Track	Lap miles	Track	Lap miles
Anglesey Coastal	1.55	Oulton Fosters	1.66
Brands Hatch Indy	1.21	Oulton Island	2.26
Brands Hatch Full	2.43	Oulton International	2.69
Cadwell Park - Car	2.19	Pembrey - National	1.46
Castle Coombe	1.85	Pembrey - Clubmans	1.49
Croft	2.12	Silverstone National	1.64
Donington National	1.98	Silverstone International	1.85
Donington GP	2.49	Silverstone Grand Prix	3.66
Goodwood	2.37	Snetterton 200	2
Lydden Hill	1	Snetterton 300	3
Mallory Park	1.35	Thruxton	2.4

RACE CIRCUITS (Note: Details correct as of March 2018)

Snetterton Circuit

Norwich

Norfolk NR16 2JU

Tel: 01953 887303

Fax: 01953 888220

Website: <http://www.snetterton.co.uk/>

Cadwell Park Circuit

Cadwell Park Circuit

Louth,

Lincolnshire LN11 9SE

Tel: 01507 343248

Fax: 01507 343519

Website: <http://www.cadwellpark.co.uk/>

Brands Hatch Circuit

Brands Hatch Circuit

Fawkham

Longfield

Kent DA3 8NG

Tel: 01474 872331

Fax: 01474 874766

e-Mail:- brandshatch@msv.com

Website:- <http://www.brandshatch.co.uk/>

Donington Park

Castle Donington

Derby

DE74 2RP

Tel: 01332 810048

e-Mail:- doningtonpark@msv.com

Website: <http://www.donington-park.co.uk/>

Silverstone Circuit

Silverstone

Towcester

Northamptonshire, NN12 8TN

Tel: 01327 320 280

e-Mail:- enquiries@silverstone.co.uk

Website: <http://www.silverstone.co.uk>

Anglesey Circuit

Circuit Office, Anglesey Circuit
Ty Croes, Anglesey
Wales, LL63 5TF

Tel: 01407 811400

Fax: 01407 811444

Email: admin@angleseycircuit.com

Website: <https://www.angleseycircuit.com/>

Mallory Park Circuit,

Church Road, Kirkby Mallory,
Leicestershire, LE9 7QE

Tel: 01455 502214

Website:

<https://www.malloryparkcircuit.com/>

Croft Circuit

West Lane
Dalton On Tees
North Yorkshire, DL2 2PL

Tel: 01325 721815

Fax: 01325 721819

Email: info@croftcircuit.co.uk

Website:- <http://www.croftcircuit.co.uk/>

Castle Combe Circuit

Castle Combe Ltd
Chippenham
Wiltshire, SN14 7EY

Phone:- 01249 782417

Fax:- 01249 782392

Website:- <https://castlecombecircuit.co.uk/>

Pembury

Pembrey Circuit
Llanelli
Carmarthenshire SA16 0HZ

Tel: 01554 891 042

Fax: 01554 891 387

Email: pembrey@barc.net

Website:- <http://www.pembreycircuit.co.uk/>

LOCOST NOVICE PACK (v2-2)

Locost Novice guide to Stress Reduction

A few hints and tips to help the Novice Racer. Some of them may sound very useful some may sound daft – please use or not as you feel best!

1. Arrive the night before, and if you can get Scrutineered to day before.
2. Early on in the weekend, orientate yourself.
Locate the Scrutineering Bay, Assembly Area, Signing On Area, Drivers Briefing Room and the Clerks Office. The Bar, restaurant and toilets are also useful!
3. On race day sign on early it's the easiest thing to (If not signed on the day before) and you might be grateful later of the extra time if you find an issue with your car.
4. On race day go to the first available new driver circuit (Mandatory) briefing that's practical.
5. Video equipment will need to be installed for scrutineering.
6. When you go to scrutineering have a couple of spare fuses, some tank tape and maybe the odd cable tie in your pocket. Check your brake fluid levels before going to scrutineering. You can then answer the question honestly when the scrutineer asks. A 13mm, 15mm and 17mm spanner and a pair of pliers won't go amiss either. Scrutineering can be a long way from where you pit, you don't want to run back!
7. Tape up the race schedule somewhere visible, preferably near a clock. (Note The schedule can change and sometimes runs early so listen out for announcements..)
8. Compared to the race day timetable the scrutineering queue starts early sometimes very early. It can even become the first race of the day!
9. Try not to pick up any daft superstitions; it messes with your head. Avoid lucky pants at all costs; think of a three day meeting! (A test day and two race days)
10. Don't forget to eat and drink enough, even the more rotund of us can fuel ourselves with adrenalin instead of food and drink. You'll pay the price on the long drive home if you don't look after yourself.
11. It sounds daft but nerves and adrenalin are a powerful diuretic go to the toilet 20 minutes before a race.
12. If you're doing a test day and a full weekends racing AND you use fireproof underwear get two sets. You know why.
13. When you come off the track after a session you think you're doing walking pace, you're not you're doing about 40 mph. Slow down some more before attempting to negotiate a tight pit lane.
14. There is no such thing as a stupid question, just ask.
15. The rules of physics ALWAYS apply to you no matter what your brain is telling you, they are never suspended so you can pull off that out braking manoeuvre.
16. If you bend it or something fails and it's beyond your capability to fix it, all may not be lost. Most things can be fixed at the track given enough time, people and spare parts. Send a distress flare up to mobilise the Locost Army. You won't believe what Locosters can fix. Everyone recognises that you've pumped in time, effort and money to just get to the track. People want to see you get a race.

Useful Contacts

750 Motor Club

<http://www.750mc.co.uk/>

M.S.A (UK Racing administrators)

<https://www.msauk.org/>

Polley Sport (Yokohama tyres)

<http://www.polleysport.com/>

Burtens (Ford engine parts specialists)

<http://www.burtonpower.com/>

Engine Parts UK (Engine parts supplier – e.g. Pistons)

<https://www.enginepartsuk.net/nural-pistons>

Nevlok (engine component supplier)

<http://nevlock.co.uk/>

JJC (Motorsport component supplier)

<https://www.jjcraceandrally.com/>

Demontweaks – (Motorsport components and tyre supplier)

<https://www.demon-tweaks.co.uk/>

Racecars Direct – (Race cars for sale)

<https://racecarsdirect.com/>

Facebook group

‘750mc Locosters’

LOCOST NOVICE PACK (v2-2)

Part Number table(s)

Area	Parts	Vendor & Part number (if known)
Engine	Bottom End Gasket Set (STD)	Payen EH750
Engine	Top end gasket Set (STD)	Payen CH750
Engine	Head Gasket (STD)	Payen AH750
Engine	Rocker Gasket (STD - Cork)	BGA RC6364
Engine	Sump Gasket (STD - Cork)	BGA OK6332
Engine	Inlet Gasket (STD)	Payen JA613
Engine	Rear timing cover gasket (STD)	Payen JR265 (Burton FP504)
Engine	Oil Filter (STD)	FRAM PH5713
Engine	Ringss +90	GOETZE 08-780617-11 (R25106 .090) Ford KL13
Engine	Pistons +90	NURAL 87-780617-00 (18647K/V1 .090)Ford J2
Engine	Exhaust Gasket	Burton FP702A
Wheel Bearings	Front Wheel Bearing kit	Quinton Hazel QWB115C (Axle) Cortina Mk3/4/5
Wheel Bearings	Rear half shaft bearing	SKF 361964 (04 20 263J)
Suspension	Top joint - RH threaded	Ford Part Number :17996516 (drag link transit mk1/2 1965-84)
		Alt QH (Quinton Hazel) Part Number QD1117RHT
		Alt AP/delphi (Automotive Products) Part Number TA298
		Alt powertrain PSDL801RHT
		Alt TRW Part Number 15-es-0874
		Alt Unipart Part Number GSJ112
		Alt FAI SS5012
		Alt VECO VB321
Suspension	Bottom Joint - ball joint	Unipart gsj188 (Austin/BL maxi 1969-81)
	Alt	Rover BTA946
		Alt QH QSJ602S
		Alt AP/Delphi TC32
		Alt Powertrain PSBJ312
		Alt TRW 04-bj-0113
		Alt Veco VB063
Suspension	Steering joints	First Line FTR4040 (Best) [FTR421 (not so good..)]
Brakes	Brakes - Front	Front Pads- EBC Green Stuff DP2291
		Caliper repair Kit (FT Fredtech Components (254001) - B54010
Brakes	Brakes - Rear - (8 inch dia)	Rear Shoes - TRW GS6070 (8 inch dia - Single piston)
		Alt Rear Shoes - Delphi LS1050
		Alt Rear Shoes - Ferodo FSB355
		Alt Rear Shoes - Mintex MGR36

DIFF SOLID CRUSH TUBE.



In the diff on the pinion shaft you have a crush-able spacer as STD which is used to set the preload on the pinion bearings. When the diff is being used in competition where we are on and off with the acceleration hard and a lot more often than it was intended for originally. It allows the crush-able spacer to continue to crush and leaves the pinion bearing with little / no preload. This also means that the backlash and engagement of the crown wheel and pinion are no longer correct. All in all it leads to a very short life for the diff unit.

Replacing the crush-able spacer with a solid item eliminates the problem and gives the diff a much longer life. With a locost assuming the correct oil level and type is being used. It should enable the diff to last the life time of the car. It's a must when the escort diff is being used on more powerful kitcars with high HP. But when done it enable the use of 250+HP to be used. You just have to sort the half shafts then.

There are quite a few places capable of doing this procedure as it is quite common practice. But it dose take time and patience to get it set up correctly. Typically it should add no more than £20-£30 to your diff rebuild costs. And with the diffs becoming harder to find it is well worth the small extra cost given the extra life span the diff benefits.

As a tip one of the first signs of the crush-able space failing is when you get oil coming past the front seal. As the preload diminishes it allows the pinion to rotate off centre and allow the oil past the seal.